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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

JAN 9, 1995

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of)

Revision of the Commission's)
Rules to Ensure Compatibility)
With Enhanced 911 Emergency)
Calling Systems)

CC Docket No. 94-102

RM-8143

Comments of Bell Atlantic
on Notice of Proposed Rulemaking

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I. Introduction and Summary

Bell Atlantic supports the concept of extending the benefits of enhanced 911 service to those served by private branch exchange systems and wireless services. The Commission's proposed rules, however, raise concerns regarding the timing and most appropriate means of achieving those objectives.

The Commission should adopt rules governing access to emergency 911 services from private branch exchange systems, with certain modifications more fully described below. The Commission should defer proceedings, however, concerning access from wireless systems pending completion of proceedings by joint industry experts on appropriate protocols and standards to govern such access, and in later proceedings address privacy, immunity and cost recovery issues.

¹ The Bell Atlantic telephone companies ("Bell Atlantic") are Bell Atlantic-Delaware, Inc., Bell Atlantic-Maryland, Inc., Bell Atlantic-New Jersey, Inc., Bell Atlantic-Pennsylvania, Inc., Bell Atlantic-Virginia, Inc., Bell Atlantic - Washington, D.C., Inc., and Bell Atlantic-West Virginia, Inc.

II. Compatibility Between Private Branch Exchanges and Enhanced 911 Systems

Bell Atlantic applauds the Commission's goal of ensuring compatibility of private branch exchange ("PBX") systems and enhanced 911 ("E-911") systems in order to safeguard public health and safety more effectively. Some of the Commission's proposed rules, however, require further amendments to ensure that its goal is achieved, or may be achieved more efficaciously by means other than those specified in the proposed rules.

A. The Commission Should More Clearly Define the Responsibilities of PBX Owners With Regard to ALI Database Creation and Maintenance

Bell Atlantic agrees that owners of PBX systems should be required to provide 911 database providers, such as Bell Atlantic, with automatic number identification ("ANI") and automatic location identification ("ALI") for each station served by that PBX.² The logistics of creating and maintaining the ANI and ALI information related to PBX stations, however, raise some additional concerns.

First, the Commission's rules should explicitly assign to PBX owners responsibility for creating an initial record of ANI and ALI information using the NENA formats, delivering that record to

² Assigning additional numbers to each PBX station will likely accelerate the need to split area codes to create additional numbers. Creation of "artificial ANI" would not necessarily obviate the problem. Such "artificial" numbers would still have to be different from "live" numbers to avoid confusion and delay in delivering emergency services.

the 911 database provider,³ and providing updated ANI and ALI records to the database provider promptly after such changes occur. Such requirements should supplement the Commission's proposed rules imposing verification and training procedures.

Second, Bell Atlantic will need to partition the initial 911 records created by each PBX owner for security reasons, so that only that owner may access the data for purposes of updating or verifying the records before Bell Atlantic uploads their data to its 911 database.⁴ Bell Atlantic will incur costs in creating and maintaining the partitions, storing the PBX records, and periodically updating the main 911 database to reflect PBX ANI and ALI changes, and should be permitted to recover those costs through additional rate elements of the 911 tariff.

Third, all 911 database providers and local exchange carriers delivering 911 calls should be indemnified and held harmless by the PBX owner from any and all liability arising out of delivery of an E-911 call with regard to which inaccurate, incomplete or out-of-date ANI or ALI was provided by the PBX owner.

³ The PBX owner could deliver that information on a computer disk, by uploading the information directly to a section of the telephone company's 911 database over a dedicated line, or through a dial-up mechanism with appropriate security safeguards.

⁴ Bell Atlantic already maintains partitioned sections of its 911 database for the ALI and ANI of customers of some smaller independent telephone companies. A fully automated system ensures that the ALI and ANI has been entered in correct format; if not, the submission is simply returned directly to the carrier for correction.

B. The Commission Should Permit Standards to Evolve Through Industry Consensus and Not Mandate Technology-Specific Solutions.

The Commission has also proposed to mandate dedicated trunk access directly to the enhanced 911 switch, and an E&M lead interface with multifrequency signalling. Such technology and architecture-specific mandates should be replaced by performance standards to permit PBX owners and local exchange carriers to implement the most efficient solution, which may change as technology evolves.

In order to ensure that ANI for each PBX station is delivered to the PSAP, it is not necessary to require a dedicated trunk from the PBX to the E-911 switch. Most PBX systems commercially available today are ISDN-compatible. Using an ISDN Primary Rate interface and a block of prepurchased telephone numbers, such PBX systems can generate a unique ANI for each PBX station without a dedicated trunk. Other technologies may provide similar capabilities. Moreover, in more populous or dense commercial areas, such a dedicated trunk requirement could quickly exhaust the space available on many of Bell Atlantic's E-911 tandems. Any costs telephone companies incur to expand existing 911 tandem capacity, if dedicated trunks are required, should be recoverable through additional rate elements of the 911 tariff.

There are also various alternatives to the proposed E&M lead interface that could provide effective E-911 system access, such as network provided reverse battery interface with multifrequency signalling, ISDN basic rate or primary rate access,

and dedicated digital handoff service. Bell Atlantic therefore urges the Commission to specify the result it seeks to achieve, rather than mandating use of particular technology to achieve that result.

The Commission also proposes to require uniform signalling and protocol standards to govern the transmission of ALI from callers to Public Safety Answering Points ("PSAPs"), and the exchange of location information data from PBXs to 911 database providers. As Bell Atlantic has previously noted⁵, such standards should be adopted through voluntary industry consensus, rather than being frozen by specification in Part 68 of the Commission's rules. This will permit standards to evolve as technology changes, without requiring a formal rule amendment.

If the Commission decides, nevertheless, to adopt in its rules any particular standard for exchange of location information data, it should incorporate by reference the standards for location information data established by the National Emergency Number Association.⁶ These standards, which establish uniform abbreviations and formats for transmitting ANI and ALI information to the 911 database, are already in nationwide use by the emergency service community and local exchange carriers, and represent the

⁵ See Amendment of the Commission's Rules to Define Effective Means for Internetworking of Customer Premises Equipment and Public Enhanced 9-1-1 Systems, RM 8143, Comments of Bell Atlantic (January 28, 1993) at 1.

⁶ See "NENA Recommended Formats for Data Exchange," and "NENA Recommended Standard for Street Thoroughfare Abbreviations," attached as exhibits to Comments of Bell Atlantic, id.

industry's determination that these standards best serve emergency service needs. There appears to be no compelling alternative, and adoption of another standard could result in costly confusion as emergency providers and customers make the transition to use of a new standard.

C. The Commission's Proposed Rules Raise Certain Additional Concerns

The proposed rules raise certain additional concerns. First, the Commission should clarify that all entities providing wireline local telephone service, including competitive access providers and cable companies, should meet the same E-911 service obligations.

Second, the Commission proposes to require PBX equipment to be capable of notifying and, presumably bridging on, an attendant or other on-site personnel. As the Commission notes, some states explicitly prohibit such three-way calls because it may create confusion as to which of the two is the calling party and where she or he is located. Even if the situation can be clarified, such confusion increases the risk that precious moments will be lost in reaching the individual needing emergency assistance. A better alternative might be for the PSAP or the caller to inform in-house security on another line, once help has been dispatched.

Third, the Commission should expand its rules to require administrators of college campuses, hospitals, military installations or other campus-type settings to provide updated 911

ANI and ALI to telephone companies, whether or not they utilize PBX systems. In these campus-type settings, Bell Atlantic's service records end at the rate demarcation point -- the minimum point of entry, and anything beyond that point is considered inside wiring. If a person on a military base moves from one residence to another, changing telephone extension and address within the base but without notifying Bell Atlantic, Bell Atlantic has no knowledge of the change and cannot appropriately update the appropriate ALI and ANI in its 911 database. This is true whether the military base uses a PBX system, a Centrex system, or just receives POTS service.

Fourth, Bell Atlantic agrees with the Network Reliability Council that industry standards bodies must determine whether additional standards are needed for the SS7 protocol before 911 services are transferred to common channel signalling.

Finally, the proposed rules mandate the use of 10-digit ANI. Some PSAPs, however, use equipment that does not currently accommodate 10-digit ANI. Such PSAPs may specify delivery of 7-digit ANI instead. The proposed rules should therefore permit delivery of either 7 or 10-digit ANI, as specified by the relevant PSAP, or should require PSAPs to upgrade their equipment to accept 10-digit ANI.

III. Compatibility Between Wireless Services and Enhanced 911 Systems

Bell Atlantic supports the concept of providing customers of wireless networks⁷ over time with enhanced 911 service capabilities similar to those provided to wireline customers.⁸

Mobile radio users, however, share certain characteristics that fundamentally differentiate them from wireline telephone users. Because mobile radio users are, by definition, often in transit, it is difficult to create a stable database of location information for each user.⁹ In many cases, the mobile user is calling not to report his or her own need for emergency help, but to request assistance for a third party. A call back number for that mobile handset may put the PSAP attendant in touch with the reporting party, but not the victim. Mobile radios also are often used by multiple callers to report the same emergency situation (e.g., a highway accident, natural disaster, or crime) at the same time, potentially overloading 911 lines or requiring some

⁷ Bell Atlantic agrees that the Commission has correctly defined the types of mobile radio services that should be subject to parity of regulation with regard to enhanced 911 service. See ¶ 38 of Notice of Proposed Rulemaking.

⁸ As a first step in that direction, all wireless customers should have access to basic 911 service where it is available. Bell Atlantic Mobile currently enables anyone using its system, including home customers and roamers, to complete calls for emergency service by simply dialing "911 send."

⁹ Bell Atlantic supports the Commission's proposal to require wireless providers to provide access to 911 services only to subscribers in their home or roamed service areas from handsets that have been service-initialized. Without those limitations, the network provider may relay inaccurate or incomplete information to the PSAP attendant.

screening mechanism. These complicating factors suggest that wireline technologies and procedures will not be easily transferable to wireless services. As a result, the Commission should allow the wireless and emergency service communities to work out solutions that fully address these unique circumstances.

A. The Commission Should Permit the Industry to Explore and Develop Appropriate, Cost-Effective Solutions to Providing Call Priority and Automatic Location Information

The Commission has proposed to require network providers, within one year, to give priority to 911 calls over non-emergency calls. Wireless providers do not have the capability to provide this service today and are unlikely to be able to implement that capability within a one-year timeframe. Although the industry, particularly the Telecommunications Industry Association, has been working voluntarily to establish standards to prioritize and queue calls in a wireless network, there are still substantial procedural and policy issues that must be discussed and resolved between wireless providers and PSAPs in order to implement such a system.¹⁰

The Commission has also proposed a three-stage plan for provision of automatic location identification that would identify the geographic location of a mobile radio user with increasing

¹⁰ For example, third party reporting of the same incident may require some sort of "throttling" capability to protect PSAPs from system overload. Similarly, prioritization itself is not a simple matter; a caller dialing a local police station to report a crime using a 7-digit number rather than 911 should not be held in queue while multiple mobile callers reporting the same traffic accident using 911 tie up the network.

degrees of accuracy. As the Commission has recognized, numerous location-specific technologies are currently under development to support primarily commercial applications. It is not clear, however, that any existing technology would permit identification of a caller's location with the degree of accuracy mandated by stage three of the Commission's proposal.

It would be premature for the Commission to adopt at this time its proposed three-stage implementation process to achieve compatibility between wireless networks and enhanced 911 systems. The wireless telecommunications and emergency service communities have been working diligently to resolve these compatibility issues. A report recently issued by joint experts from these communities recommends that the parties pursue an "evolutionary path" to appropriate solutions, which take into account the unique economic, operational and technological challenges facing both wireless and emergency service providers.¹¹

The Commission should not establish mandates now for performance standards that may not be technically achievable within the time frames contemplated by the Commission, or could be achieved only at costs that significantly outweigh the benefits attained. Nor should the Commission require wireless carriers to adopt an incremental implementation plan that may require carriers to develop and implement technologies for one stage that must be

¹¹ For example, the equipment currently used by many PSAPs cannot accommodate delivery of 10-digit ANI, and none can process the 15-digit ANI that identifies a roaming subscriber's mobile handset.

abandoned in trying to achieve the next stage. Such a mandatory incremental plan with arbitrary, technology-forcing deadlines is unlikely to be the most efficient or effective way to achieve the Commission's goals over time.

The Commission should instead permit the wireless and emergency services industries to continue their joint efforts voluntarily to work toward compatibility, and periodically request progress reports toward that goal.

B. The Commission Should Defer to a Later Proceeding Resolution of Privacy, Immunity and Cost Recovery Issues

Any further proceeding by the Commission to implement a final industry consensus concerning enhanced 911 standards and performance requirements for wireless service providers should address privacy, indemnification and cost recovery issues.

Transmission of automatic location identification by wireless network providers may heighten callers' concerns that the network is capable of having them "under surveillance." For example, use of global positioning technologies would arguably permit up-to-the-minute knowledge of the caller's whereabouts, even if his or her handset is not activated. In a further rulemaking proceeding, the Commission should consider requiring PSAPs to safeguard such information and use it only for purposes of providing required emergency services.

Wireless service providers should also be given explicit immunity from liability in connection with their delivery of calls to 911 service providers pursuant to the Commission's rules, state

law or regulation, or standard industry practice.¹²

Finally, any technological solution to the problem of enhanced 911 compatibility for wireless networks is likely to require substantial network and equipment modifications at significant cost. The wireline network currently recovers the costs of providing enhanced 911 service through local surcharges. Such locally-based cost recovery mechanisms may not be appropriate for wireless subscribers, who are geographically mobile and may place calls to 911 providers in both home and roamed areas. Whatever mechanism the Commission adopts must fully compensate wireless network providers for their costs, and must do so in a competitively neutral fashion so that no wireless network provider is unfairly disadvantaged while supporting public health and safety.


¹² The same immunities should cover all wireless and wireline telecommunications network providers, regardless of the technology used in providing the service.

Conclusion

The Commission should adopt rules governing access to emergency 911 services from private branch exchange systems, with the modifications proposed by Bell Atlantic. The Commission should defer proceedings relating to access from wireless systems pending completion of proceedings by joint industry experts on appropriate protocols and standards to govern such access, and in later proceedings address privacy, immunity and cost recovery issues.

Respectfully submitted,

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